EXHIBIT W

EXHIBIT 19

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 3 of 28 Page ID #:2721

Entropic Communications, LLC v. Comcast Corporation, et al. Case 2:23-cv-01050-JWH-KES (C.D. Cal.)

U.S. Patent No. 11,785,275 Exemplary Infringement Chart

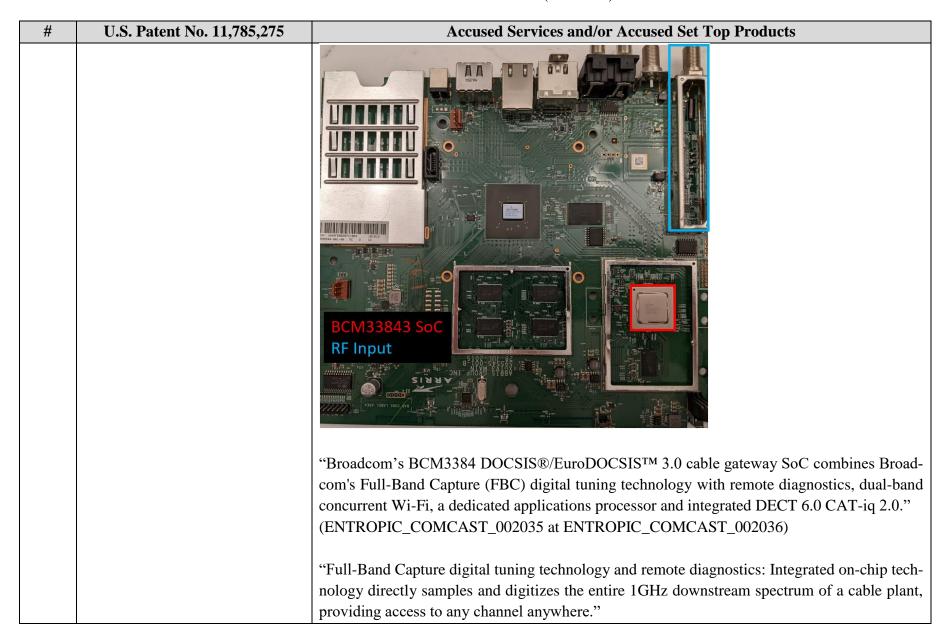
Comcast operates and maintains a nationwide television and data network through which it sells, leases, and offers for sale products and services, including the Technicolor TC8717 cable modem, Technicolor CGM4140 cable modem, Technicolor CGM4331 cable modem, and products that operate in a similar manner ("Accused Cable Modem Products"), as well as the Arris AX013ANC STB, Arris AX013ANM STB, Arris AX014ANC STB, Arris AX014ANM STB, Arris MX011ANC STB, Arris MX011ANM STB, Pace PX013ANC STB, Pace PX013ANM STB, Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner ("Accused Set Top Products"). Comcast provides cable television and internet services ("Accused Services") via the lease, sale, and/or distribution of the Accused Cable Modem Products and/or the Accused Set Top Products. Comcast literally and/or under the doctrine of equivalents infringes the claims of the '206 Patent by making, using, selling, offering for sale, and/or importing the Accused Services, Accused Cable Modem Products, and/or the Accused Set Top Products.

As shown below in the chart with exemplary support, the Accused Services and/or the Accused Set Top Products infringe at least claims 1, 2, 5, 7, 8, 10-12, 15, 17, 18, and 20 of U.S. Patent No. 11,785,275 ("275 Patent"). The '275 Patent was filed September 30, 2022, issued October 10, 2023, and is entitled "System and Method for Receiving a Television Signal." The '275 Patent claims priority to U.S. Patent Application No. 17/862,946, filed on Jul. 12, 2022; U.S. Patent Application No. 17/587,462, filed on Jan. 28, 2022; U.S. Patent Application No. 17/217,244, filed on Mar. 30, 2021; U.S. Patent Application No. 16/430,506, filed on Jun. 4, 2019; U.S. Patent Application No. 15/792,318, filed Oct. 24, 2017; U.S. Patent Application No. 14/948,881, filed Nov. 23, 2015; U.S. Patent Application No. 14/617,973, filed on Feb. 10, 2015; U.S. Patent Application No. 13/962,871, filed on Aug. 8, 2013; U.S. Patent Application Serial No. 12/762,900 filed on Apr. 19, 2010; and U.S. Provisional Patent Application No. 61/170,526 filed Apr. 17, 2009.

The Accused Services infringe the claims of the '275 Patent, as described below, either directly under 35 U.S.C. § 271(a), or indirectly under 35 U.S.C. §§ 271(b)–(c).

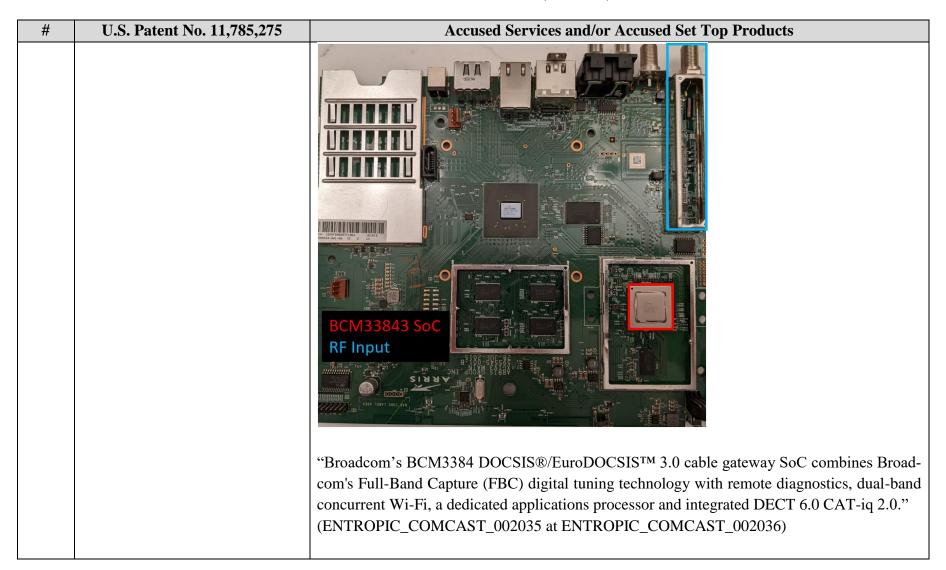
#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
1pre	A method for operating a television receiver, comprising:	The Accused Services perform the claimed method utilizing, for example, the Accused Set Top Products, which include at least one set top box ("STB") located at each subscriber location, including, for example, the Arris AX013ANC STB, Arris AX013ANM STB, Arris AX014ANC STB, Arris AX014ANM STB, Arris MX011ANC STB, Arris MX011ANM STB, Pace PX013ANC STB, Pace PX013ANM STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung SX022ANM STB, and products that operate in a similar manner. By way of example, the Arris AX013ANM is charted herein. As described below, the Arris AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is
		representative of all Accused Set Top Products, including those having BCM3383, BCM3384, BCM33843, or BCM3390 SoCs.
1a	receiving, by an input terminal, an input signal comprising broadcast channels, the broadcast channels comprising a plurality of desired channels and a plurality of undesired channels, wherein the plurality of desired channels are noncontiguous;	The Accused Services receive, by an input terminal, an input signal comprising broadcast channels, the broadcast channels comprising a plurality of desired channels and a plurality of undesired channels, wherein the plurality of desired channels are non-contiguous as described below. Specifically, the Accused Set Top Products include an input terminal that receives an input signal from the cable plant. For example, as shown below, the Arris AX013ANM includes a RF input, highlighted in blue, that is connected to a coaxial cable. This coaxial cable carries the input signal received via the cable plant. On informed belief, the input signal includes one or more television channels and one or more data channels, together constituting broadcast channels. On informed belief, the plurality of desired channels are located in non-contiguous portions of the input signal.

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 5 of 28 Page ID #:2723



#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast
		acquisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
1b	processing, by a radio front end	The Accused Services process, by a radio front end coupled to the input terminal, the input
	coupled to the input terminal, the	signal to generate a processed input signal as described below.
	input signal to generate a pro-	
	cessed input signal;	Specifically, the Accused Set Top Products include applicable circuity and/or software modules
		that processes the input signal. For example, the Arris AX013ANM includes a Broadcom
		BCM33843 SoC, highlighted in red below. The applicable circuity and/or software modules of
		the Accused Set Top Products include a radio front end that processes the input signal, high-
		lighted in orange below.

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 7 of 28 Page ID #:2725



#	U.S. Patent No. 11,785,275	Accused Services and/	or Accused Set Top Products
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Full-Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENT)	ROPIC_COMCAST_002031, annotated)
		1	regarding implementation and identification of the e and/or other instrumentalities used to implement
		the claimed system. As additional informati	ion is obtained through discovery related to the Ac-
1c	digitizing, by an analog-to-digital		og-to-digital converter (ADC) coupled to the radio
	converter (ADC) coupled to the ra- dio front end, the processed input	front end, the processed input signal to gene	erate a digitized signal as described below.
	signal to generate a digitized sig-	Specifically, the Accused Set Top Products	s include applicable circuitry and/or software mod-
	nal;	_	input signal. For example, the Arris AX013ANM
			re modules constituting a full-band capture ADC,
		signal.	the radio front end and digitizes the processed input
		com's Full-Band Capture (FBC) digital tun	OCSIS TM 3.0 cable gateway SoC combines Broading technology with remote diagnostics, dual-band processor and integrated DECT 6.0 CAT-iq 2.0."

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037) Full-Band Capture Digital Tuner Architecture
		Analog Domain Digital Domain
		Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTROPIC_COMCAST_002031, annotated)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
1d	selecting, by a digital frontend	The Accused Services select, by a digital frontend (DFE) coupled to the ADC, the plurality of
	(DFE) coupled to the ADC, the	desired channels from the digitized signal as described below.
	plurality of desired channels from	
	the digitized signal; and	Specifically, the Accused Set Top Products include applicable circuitry and/or software modules constituting a digital front end operable to select the plurality of desired channels from the digitized signal. For example, the Arris AX013ANM includes applicable circuitry and/or software modules constituting a digital tuner, highlighted in green below, that is coupled to the ADC and selects the desired channels from the digitized signal.
		"Broadcom's BCM3384 DOCSIS®/EuroDOCSIS™ 3.0 cable gateway SoC combines Broadcom's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band concurrent Wi-Fi, a dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)

#	U.S. Patent No. 11,785,275	Accused Services and/o	or Accused Set Top Products
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Full Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTR	OPIC_COMCAST_002031, annotated)
		specific components, source code, software	regarding implementation and identification of the and/or other instrumentalities used to implement
			on is obtained through discovery related to the Ac- Entropic will supplement these contentions.
1e	outputting, by the DFE, the selected plurality of desired channels to at least one demodulator as a		he selected plurality of desired channels to at least
	digital datastream,	Specifically, the Accused Set Top Products	include applicable circuitry and/or software mod-
		example, the Arris AX013ANM includes ap tuting at least one demodulator, highlighted in The digital tuner outputs the desired channel.	e digital front end to at least one demodulator. For plicable circuitry and/or software modules constinuously below, that is coupled to the digital tuner. Is to the demodulators for processing. As both the edigital domain, the output to the demodulators is
		a digital datastream.	angum demodration is

#	U.S. Patent No. 11,785,275	Accused Services and/	or Accused Set Top Products
		nology directly samples and digitizes the enterproviding access to any channel anywhere.' (ENTROPIC_COMCAST_002035 at ENTI- "Bandwidth flexibility: Supports DOCSIS at	ROPIC_COMCAST_002037) and digital video on any frequency eliminating bined with Broadcom's set-top box SoC with fast be pre-tuned."
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Full-Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTI	ROPIC_COMCAST_002031, annotated)
		specific components, source code, software the claimed system. As additional information	regarding implementation and identification of the e and/or other instrumentalities used to implement ion is obtained through discovery related to the Act, Entropic will supplement these contentions.

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
1f	wherein the demodulator extracts	The demodulator extracts information encoded in the digital datastream as described below.
	information encoded in the digital	
	datastream.	Specifically, the demodulators include applicable circuitry and/or software modules that output
		the desired channels from the digital tuner to at least one demodulator. For example, the Arris
		AX013ANM includes applicable circuitry and/or software modules constituting the demodula-
		tors to extract information, such as television programming, encoded in the digital datastream.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast
		acquisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
2	The method of claim 1, wherein	The DFE outputs the digital datastream via a serial interface as described below.
	the DFE outputs the digital	Creatifically the Assured Cet Ten Duedwets include analisable singuitary and described
	datastream via a serial interface.	Specifically, the Accused Set Top Products include applicable circuitry and/or software modules constituting a DFE that outputs a digital datastream. <i>See</i> 1e. On informed belief, this digital
		datastream is provided via a serial interface.
		datasticam is provided via a seriai interface.

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 14 of 28 Page ID #:2732

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products	
		Discovery will provide detailed information regarding implementation and identification of the	
		specific components, source code, software and/or other instrumentalities used to implement	
		the claimed system. As additional information is obtained through discovery related to the Ac-	
		cused Services and related instrumentalities, Entropic will supplement these contentions.	
5	The method of claim 1, wherein	The extracted information is stored for use in a digital video recorder (DVR) as described be-	
	the extracted information is stored	low.	
	for use in a digital video recorder		
	(DVR).	Specifically, the Accused Set Top Products are DVRs. For example, the Arris AX013ANM is	
		a DVR.	
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD	
		programming on the hard drive."	
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)	
		Discovery will provide detailed information regarding implementation and identification of the	
		specific components, source code, software and/or other instrumentalities used to implement	
		the claimed system. As additional information is obtained through discovery related to the Ac-	
		cused Services and related instrumentalities, Entropic will supplement these contentions.	
7	The method of claim 1, wherein	The plurality of desired channels comprises at least one television channel as described below.	
	the plurality of desired channels		
	comprises at least one television	Specifically, the Accused Set Top Products are used to watch and/or record television program-	
	channel.	ming. This includes a user selecting one or more desired television channels to watch and/or	
		record.	

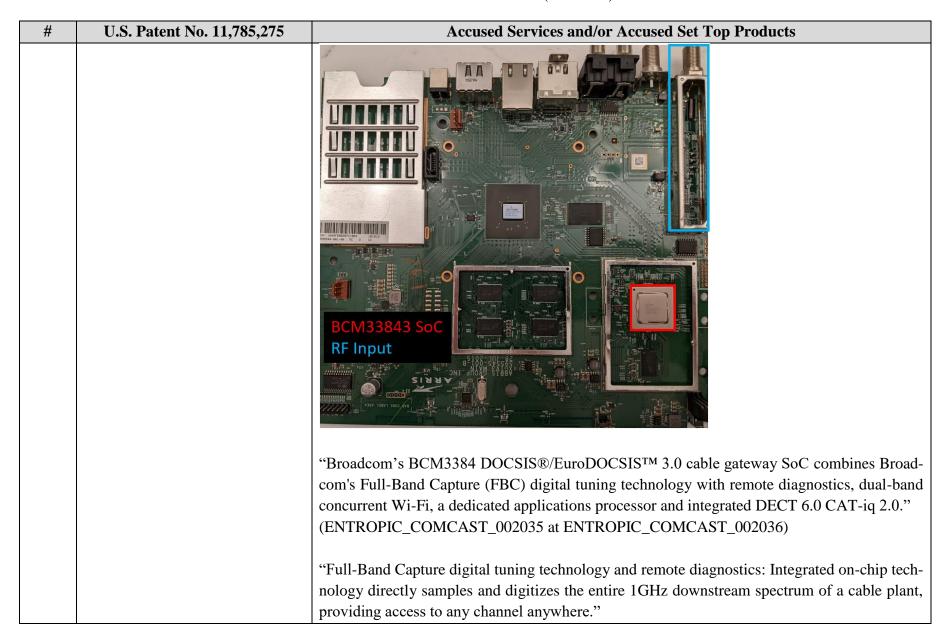
#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast
		acquisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD
		programming on the hard drive."
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
8	The method of claim 1, wherein	The plurality of undesired channels comprises at least one television channel as described be-
	the plurality of undesired channels	low.
	comprises at least one television	
	channel.	Specifically, the Accused Set Top Products are used to watch and/or record television program-
		ming. This includes a user selecting one or more desired television channels to watch and/or
		record. The other television channels provided by Comcast that the user does not select consti-
		tute the plurality of undesired channels.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 16 of 28 Page ID #:2734

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive."
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
10	The method of claim 1, wherein the broadcast channels comprise	The broadcast channels comprise cable broadcast channels as described below.
	cable broadcast channels.	Specifically, Comcast is a cable provider and the Accused Services include providing cable broadcast channels.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive."
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)

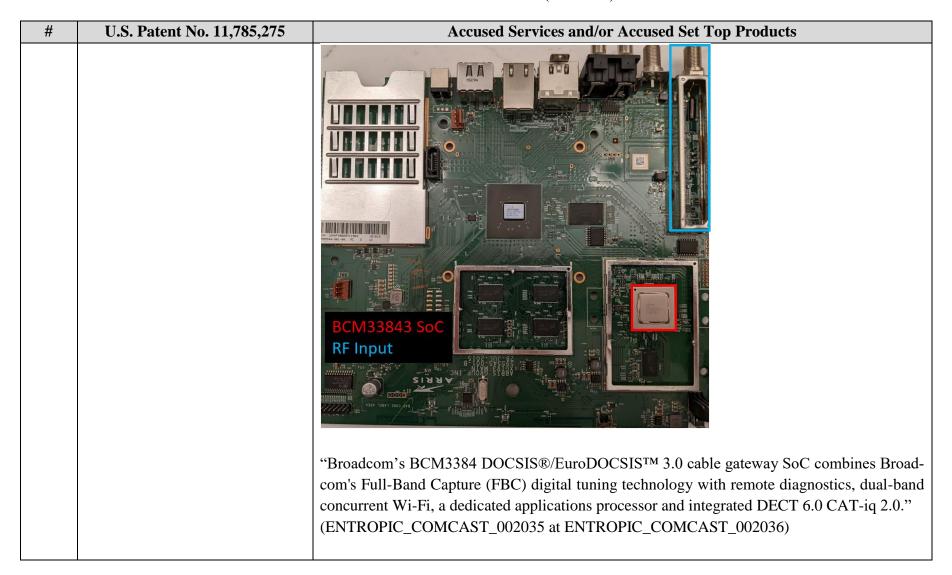
#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
11pre	A television receiver device, com-	The Accused Services are provided using at least one set top box ("STB") located at each sub-
	prising:	scriber location, for example, the Accused Set Top Products including the Arris AX013ANC
		STB, Arris AX013ANM STB, Arris AX014ANC STB, Arris AX014ANM STB, Arris
		MX011ANC STB, Arris MX011ANM STB, Pace PX013ANC STB, Pace PX013ANM STB,
		Pace PX022ANC STB, Pace PX022ANM STB, Samsung SX022ANC STB, Samsung
		SX022ANM STB, and products that operate in a similar manner.
		As shown below, the Accused Set Top Products constitute a television receiver device. By way
		of example, the Arris AX013ANM is charted herein. As described below, the Arris
		AX013ANM has a Broadcom BCM33843 SoC. On informed belief, the Arris AX013ANM is
		representative of all Accused Set Top Products, including those having BCM3383, BCM3384,
		BCM33843, or BCM3390 SoCs.
11a	an input terminal operable to re-	The Accused Set Top Products include an input terminal operable to receive an input signal
	ceive an input signal comprising	comprising broadcast channels, the broadcast channels comprising a plurality of desired chan-
	broadcast channels, the broadcast	nels and a plurality of undesired channels, wherein the plurality of desired channels are non-
	channels comprising a plurality of	contiguous as described below.
	desired channels and a plurality of	
	undesired channels, wherein the	Specifically, the Accused Set Top Products include an input terminal that receives an input
	plurality of desired channels are	signal from the cable plant. For example, as shown below, the Arris AX013ANM includes a
	non-contiguous;	RF terminal, highlighted in blue, that is connected to a coaxial cable. This coaxial cable carries
		the input signal received via the cable plant. On informed belief, the input signal includes one
		or more television channels and one or more data channels, together constituting broadcast
		channels. On informed belief, the plurality of desired channels are located in non-contiguous
		portions of the input signal.

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 18 of 28 Page ID #:2736



#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast ac-
		quisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
11b	a radio front end, coupled to the in-	The Accused Set Top Products include a radio front end, coupled to the input terminal, operable
	put terminal, operable to process	to process the input signal as described below.
	the input signal;	
		Specifically, the Accused Set Top Products include applicable circuity and/or software modules
		constituting a radio front end coupled to the input terminal. For example, the Arris AX013ANM
		includes a Broadcom BCM33843 SoC, highlighted in red below. The applicable circuity and/or
		software modules include a radio front end that processes the input signal, highlighted in orange
		below.

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 20 of 28 Page ID #:2738



Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 21 of 28 Page ID #:2739

#	U.S. Patent No. 11,785,275	Accused Services and/	or Accused Set Top Products
		Full-Band Capture Digital Tune	er Architecture
		Analog Domain	Digital Domain
		LNA Full Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTI	ROPIC_COMCAST_002031, annotated)
		specific components, source code, software the claimed system. As additional informati	regarding implementation and identification of the e and/or other instrumentalities used to implement on is obtained through discovery related to the Actual Entropic will supplement these contentions.
11c			cessed input signal to generate a digitized signal as
	angiazea signai, and	ules constituting an ADC that digitizes the includes applicable circuitry and/or softwa	input signal. For example, the Arris AX013ANM re modules constituting a full-band capture ADC, the radio front end and digitizes the processed input

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		"Broadcom's BCM3384 DOCSIS®/EuroDOCSIS™ 3.0 cable gateway SoC combines Broad-
		com's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band
		concurrent Wi-Fi, a dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036) Full-Band Capture Digital Tuner Architecture
		Analog Domain Digital Domain Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTROPIC_COMCAST_002031, annotated)

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 23 of 28 Page ID #:2741

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		Discovery will provide detailed information regarding implementation and identification of the
		specific components, source code, software and/or other instrumentalities used to implement
		the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
11d	a digital frontend (DFE), coupled	The Accused Set Top Products include a digital frontend (DFE), coupled to the ADC, operable
	to the ADC, operable to select the	to select the plurality of desired channels from the digitized signal and output the selected plu-
	plurality of desired channels from	rality of desired channels to at least one demodulator as a digital datastream as described below.
	the digitized signal and output the	
	selected plurality of desired chan-	Specifically, the Accused Set Top Products include applicable circuitry and/or software mod-
	nels to at least one demodulator as	ules constituting a digital front end operable to select the plurality of desired channels from the
	a digital datastream,	digitized signal. For example, the Arris AX013ANM includes applicable circuitry and/or soft-
		ware modules constituting a digital tuner, highlighted in green below, that is coupled to the
		ADC and selects the desired channels from the digitized signal. The selected channels are out-
		put to a demodulator, highlighted in purple below. As both the tuner and the demodulators are
		in the digital domain, the output from the tuner to the demodulators is a digital datastream.
		"Broadcom's BCM3384 DOCSIS®/EuroDOCSIS™ 3.0 cable gateway SoC combines Broad-
		com's Full-Band Capture (FBC) digital tuning technology with remote diagnostics, dual-band
		concurrent Wi-Fi, a dedicated applications processor and integrated DECT 6.0 CAT-iq 2.0."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002036)
		(LIVINOI IE_COMENSI_002033 at LIVINOI IE_COMENSI_002030)
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating

#	U.S. Patent No. 11,785,275	Accused Services and/or	Accused Set Top Products
		quisition technology, video channels can be p (ENTROPIC_COMCAST_002035 at ENTRO	OPIC_COMCAST_002037)
		Full-Band Capture Digital Tune	r Architecture
		Analog Domain	Digital Domain
		LNA Full-Band Capture	Demods xN All Digital Tuner
		(ENTROPIC_COMCAST_002029 at ENTRO	OPIC_COMCAST_002031, annotated)
		Discovery will provide detailed information re	egarding implementation and identification of the
		* *	and/or other instrumentalities used to implement
		the claimed system. As additional information cused Services and related instrumentalities, I	n is obtained through discovery related to the Ac- Entropic will supplement these contentions.
11e	wherein the demodulator is opera-	-	rmation encoded in the digital datastream as de-
	ble to extract information encoded in the digital datastream.	scribed below.	
			able circuitry and/or software modules that output
		_	at least one demodulator. For example, the Arris
			d/or software modules constituting the demodula- programming, encoded in the digital datastream.
		tors to extract information, such as television	programming, encoded in the digital datastream.

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive." (ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed system. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
12	The television receiver device of claim 11, wherein the DFE is op-	The DFE is operable to output the digital datastream via a serial interface as described below.
	erable to output the digital datastream via a serial interface.	Specifically, the Accused Set Top Products include applicable circuitry and/or software modules constituting a DFE that outputs a digital datastream. <i>See</i> 11d. On informed belief, this digital datastream is provided via a serial interface.
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		the claimed system. As additional information is obtained through discovery related to the Accused Services and related instrumentalities, Entropic will supplement these contentions.
15	The television receiver device of claim 11, wherein the extracted information is stored for use in a dig-	The extracted information is stored for use in a digital video recorder (DVR) as described below.
	ital video recorder (DVR).	Specifically, the Accused Set Top Products are DVRs. For example, the Arris AX013ANM is a DVR.
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive."
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
		Discovery will provide detailed information regarding implementation and identification of the specific components, source code, software and/or other instrumentalities used to implement the claimed system. As additional information is obtained through discovery related to the Ac-
		cused Services and related instrumentalities, Entropic will supplement these contentions.
17	The television receiver device of claim 11, wherein the plurality of	The plurality of desired channels comprises at least one television channel as described below.
	desired channels comprises at least	Specifically, the Accused Set Top Products are used to watch and/or record television program-
	one television channel.	ming. This includes a user selecting one or more desired television channels to watch and/or record.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere."

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 27 of 28 Page ID #:2745

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast ac-
		quisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive."
		(ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
18	The television receiver device of	The plurality of undesired channels comprises at least one television channel as described be-
	claim 11, wherein the plurality of	low.
	undesired channels comprises at	
	least one television channel.	Specifically, the Accused Set Top Products are used to watch and/or record television program-
		ming. This includes a user selecting one or more desired television channels to watch and/or
		record. The other television channels provided by Comcast that the user does not select constitute the plurality of undesired channels.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip tech-
		nology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant,
		providing access to any channel anywhere."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating
		limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast ac-
		quisition technology, video channels can be pre-tuned."
		(ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)

Case 2:23-cv-01049-JWH-KES Document 115-24 Filed 11/13/23 Page 28 of 28 Page ID #:2746

#	U.S. Patent No. 11,785,275	Accused Services and/or Accused Set Top Products
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive." (ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)
20	The television receiver device of claim 11, wherein the broadcast	The broadcast channels comprise cable broadcast channels as described below.
	channels comprise cable broadcast channels.	Specifically, Comcast is a cable provider and the Accused Services include providing cable broadcast channels.
		"Full-Band Capture digital tuning technology and remote diagnostics: Integrated on-chip technology directly samples and digitizes the entire 1GHz downstream spectrum of a cable plant, providing access to any channel anywhere." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Bandwidth flexibility: Supports DOCSIS and digital video on any frequency eliminating limitations of "block" tuners. When combined with Broadcom's set-top box SoC with fast acquisition technology, video channels can be pre-tuned." (ENTROPIC_COMCAST_002035 at ENTROPIC_COMCAST_002037)
		"Storage Capacity: Currently, your X1 DVR can record approximately 150 total hours of HD programming on the hard drive." (ENTROPIC_COMCAST_002961 at ENTROPIC_COMCAST_002963)